REMARKS

This Reply is submitted in response to an Office Action dated 10 July 2003 in which the Examiner rejects all pending claims 1-20 on prior art grounds. Herein, Applicant submits the present Remarks which clearly illustrate the patentability of the claimed invention. Consideration and entry hereof, and allowance of the application, are respectfully requested.

The Examiner's particular rejections are now addressed in turn.

Claims 1, 2, 5, 8, 9, 13, 15, 17, and 19 are rejected as lacking novelty in view of U.S. Patent No. 3,289,027 to Jones. In response, Applicant submits that Jones fails to teach each and every limitation recited in the rejected claims, thus the outstanding rejections are improper and may not be maintained.

Turning briefly to the claimed invention, Applicant notes that claims 1 and 2 are independent and claims 3-20 variously depend therefrom. Thus, novelty of claims 1 and 2 necessarily implies novelty of claims 3-20. Accordingly, claims 1 and 2 primarily addressed herein.

Both of Applicant's claims 1 and 2 recite a surge absorber without chips comprising, *inter alia*, a pair of discharge electrodes each having a broadened tip including a projected or patterned surface, and sealing spacers fitted and fixed on the discharge electrodes and fixed airtightly to an inside wall of a one piece cylindrical housing, the discharge electrodes being held in said housing facing one another with a predetermined distance therebetween.

As will be conclusively shown herein, at least these limitations recited in claim 1, particularly the above-emphasized portions, are not taught or even suggested, by the Jones reference.

Turning briefly to Applicant's specification, an exemplary embodiment of a surge absorber according to the invention is disclosed at page 11, line 26 through page 12, line 25 and shown at Figure 1. Therein, the surge absorber includes a one-piece cylindrical housing 10, sealing spacers 22, 24 disposed at opposite ends of the housing 10, and lead terminals 14, 16 extending through the sealing spacers 22, 24 and into an air chamber 12 within the housing 10. At an inner end, each of the lead terminals 14, 16 includes a broadened tip, thus forming oppositely discharge electrodes 18, 20. The broadened tip of each discharge electrode 18, 20 include a protruding portion 18a, 20a.

The protruding portions 18a, 20a, as shown in Figure 1, comprise generally conical forms which extend from a central portion of the broadened tips in a direction of the longitudinal axis of the lead terminals 14,16. The present embodiment and various additional embodiments (see Figures 9-16 and corresponding text) of the protruding portions 18a, 20a advantageously allow the broadened tips to be disposed closely together as desired while still maintaining a sufficient volume of the air chamber 12 therebetween to facilitate certain applications. For example, the volume of the air chamber 12 delimited by the oppositely disposed protruding portions 18a, 20a and broadened tips may be configured to allow for a stable discharging (page 12, lines 9-15; page 23, lines 1-7), or may be maximized to permit a large maximum surge current (page 23, lines 8-24), or further may be configured to provide optical protection to the surge absorber (page 23, line 25 through page 24, line 7), etc.

The lead terminals 14, 16 are fixed within the respective sealing spacers 22, 24. The sealing spacers 22, 24 are then inserted into the housing 10 and fixed *airtightly* therein at a desired location such that the discharge electrodes 18, 20 are disposed in the air chamber 12 with a *predetermined distance therebetween.* It is noted that prior to airtight fixation, the sealing spacers 22, 24 are fully adjustable within the housing 10. In this way, the discharge electrodes may be conveniently disposed in the chamber 12, as desired, to result in any predetermined distance therebetween, thus enabling the surge absorber to used for a wide variety of surge applications.

Turning now to Jones, a voltage protector is disclosed including two cup shaped metal end caps 1 and 2, an intermediate metal sleeve 3, two ceramic spacing cylinders 4 and 5, and two electrodes 10 and 11. Col. 1, lines 40-70 and Figure 1. The spacing cylinders 4 and 5 include inner ends fixed within the metal sleeve 3 and opposite ends extending therefrom whereat the end caps 1, 2 are disposed. *Id.* The electrodes 10 and 11 are fixed to the spacing cylinders 4,5 at a shoulder d and are further fixed to the end caps 1, 2 at an end of the electrodes 10, 11 opposite the shoulder d. Portions b, c of the electrodes 10, 11 extend into the metal sleeve 3.

It is noted with particular emphasis that the spacing cylinders 4, 5 are not fixed airtightly within the metal sleeve 3. Particularly, the shoulder d of the electrodes 10,11 is *polygonal* in cross-section whereas the surrounding spacing cylinders are circular in cross-section. Col. 2, lines 5-11. Thus, spaces are delimited between the spacing cylinders 4,5 and the electrodes 10,11. The electrodes 10,11 each further include a passageway 12 connected to an exhaust tube 13 which extends through the respective end cap 1, 2. *Id.* Thus, the spacing cylinders 4,5 are in no way airtightly sealed with respect to the metal sleeve 3.

It is also noted with particular emphasis, that the sealing spacers 4, 5, not fitted nor fixed in any manner on the electrodes 10, 11. Instead, the electrodes 10, 11 are secured, preferably by welding or brazing, to an internal surface of the end caps 1, 2. Col. 1, lines 62-66. The electrodes 10, 11 extend freely, from this point of fixation with the end caps 1, 2, through the spacing cylinders 4, 5 and into an interior of the intermediate metal sleeve 3. The sealing spacers 4, 5 are separately secured to the metal sleeve 3 at metalized end bands 7 and are not secured, by any means, to the electrodes 10, 11.

In manufacturing this Jones device, clearly the spacing cylinders 4, 5 are first secured to the intermediate metal sleeve 3 at the metalized end bands 7. In a separate step, the electrodes 10, 11 are fixed on the end caps 1, 2. Then, the free end of the electrodes 10, 11 is inserted into and through the spacing cylinders 4, 5 and into the metal

sleeve 3. Finally, the end caps 1, 2 fixed onto the outer edge of the spacing cylinders 4, 5 at metalized end bands 6.

Finally, it is noted that Jones teaches inner end faces of the electrodes 10, 11 being slightly rounded in order that the gap between them be maintained should the axes of the electrodes not be in exact alignment. Col. 1, lines 66-69. Jones does not teach the electrodes 10, 11 as including any type of projected or patterned surface whatsoever.

Returning to Applicant's claims 1 and 2, a surge absorber without chips is recited comprising, *inter alia*, at least one broadened tip having a projected or patterned surface. As discussed above, Applicant's projected surface is a distinct geometric feature extending from opposing electrodes for regulating the volume of air disposed therebetween. This limitation is clearly not taught by Jones. To the contrary, as mentioned hereinabove, the reference merely discloses opposing electrodes having slightly rounded surfaces for maintaining a consistent distance therebetween during movement of the electrodes. Further, Jones in no manner discloses opposing electrodes include a projected surface.

Applicant's claims 1 and 2 further recite sealing spacers fitted and fixed on a lead portion of a lead terminal. Jones teaches no such limitation. As discussed in detail above, the reference discloses spacing cylinders 4, 5 welded to a metal sleeve 3 and electrodes separately welded to end caps 10, 11, where the electrodes 10, 11 are simply inserted into the spacers 4, 5, and into the metal sleeve 3. That is, the spacers 4, 5 of Jones are not at all fitted or fixed onto the electrodes 10, 11.

Claims 1 and 2 also recite the pair of lead terminals and the sealing spacer afixed thereon being inserted from open ends on both sides of said housing into an interior of said housing. Since the spacing cylinders 4, 5 are in no way affixed on the electrodes 10, 11 of Jones, clearly the reference does not teach this limitation either. To the contrary, in Jones, the spacing cylinders 4, 5 are affixed onto the metal sleeve then the electrodes 10, 11 are separately affixed on to the end caps 1, 2 and then inserted into the spacers 4, 5

and into the metal sleeve 3, as described above in detail. This configuration and resulting manufacture are complete different and distinct from Applicant's invention as claimed and described.

Furthermore, claims 1 and 2 recite the two sealing spacers being fixed airtightly to an inside wall of the housing. Jones also fails to teach this limitation. As discussed above, the spacing cylinders 4, 5 of the reference are not fixed airtightly with respect to the metal sleeve 3 because spaces are specifically and purposefully created around an interior of the cylinders 4, 5 proximate the electrodes 10, 11 to allow passage of gases from the interior of the Jones surge device to the outer end of the electrodes 10, 11 and back again.

Additionally, claims 1 and 2 recite the electrodes being held within the housing facing one another with a predetermined distance therebetween. This limitation is also not taught by Jones. The reference disposes the electrodes 10, 11 at a *fixed* distance with respect to one another. That is, the spacing cylinders 4, 5 seat fixedly at shoulders I of the metal sleeve 3, the electrodes 10, 11 are fixed at the end caps 1, 2 which are correspondingly fixed on the spacing cylinders 4, 5 at chamfered edge 8. Thus, there is no adjustability whatsoever regarding the position of the electrodes 10, 11 at the interior of the metal sleeve 3. Accordingly, the distance between the electrodes 10, 11 is *fixed* and requires no predetermination. To the contrary, Applicant's sealing spacers are freely positionable within the housing, as recited and described in the present application. Accordingly, the resulting distance between Applicant's opposing discharge electrodes is truly predetermined, as recited in claims 1 and 2.

Thus, Jones clearly fails to teach each and every limitation of claims 1 and/or 2. Therefore, these claims are novel over Jones. Since claims 1 and 2 are not further presently rejected, these claims are correspondingly allowable to Applicant. Additionally, claims 3-20 variously depend from claims 1 or 2 and are thus correspondingly allowable to Applicant. Reconsideration and withdrawal of all outstanding rejections is respectfully requested.

It is noted that while additional patents to Kozlowski, Kawiecki, Lange, Hill, Zuk, and Harada are presently relied upon by the Examiner in rejecting the mentioned dependent claims, these references taken singularly or in combination fail to teach or suggest all of the limitations of claims 1-20 and, further, do not remedy the above-discussed deficiencies of Jones, and accordingly are not considered in detail herein.

It is further noted that, not only does Jones fail to anticipate all of the limitations of claims 1 and 2 as shown above, but the reference also does not suggest the claimed invention. Particularly, Jones is directed at a voltage protector having electrodes of various cross-sectional diameters in order to determining position of discharge and to provide a fail safe property. Col. 2, lines 33-72. Jones, in no manner, attempts to provide the simple construction of Applicant's surge absorber, nor does the reference approach any of the problems addressed by the present invention nor provide any of the many advantages of Applicant's invention. Accordingly, there is no suggestion or motivation in Jones or elsewhere in the art to modify Jones or combine Jones with other prior art to form Applicant's invention.

For at least the reasons set forth herein, claims 1-20 are allowable to Applicant. Withdrawal of all outstanding rejections and prompt issuance of a Notice of Allowance are respectfully requested.

Applicant hereby petitions for any necessary extension of time in order to have this Reply entered and considered.

The Examiner is invited to contact Applicant's attorneys at the below-listed telephone number concerning the present Reply or otherwise regarding the instant application.

Please charge any fees due and credit any amounts to Deposit Account No. 06-1130 maintained by Applicant's attorneys.

Respectfully submitted,

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